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Kramer Electronics, Ltd.

USER MANUAL

Model:

SL-1

Master Room Controller

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups[1] that are clearly defined by function.

Thank you for purchasing the Kramer TOOLS **SL-1** *Master Room Controller*, which is ideal for:

- Controlling multimedia rooms, such as classrooms, auditoriums, conference rooms, and so on, and is Site-CTRL compatible enabling remote control and management of the AV equipment
- Production studios, rental, and staging

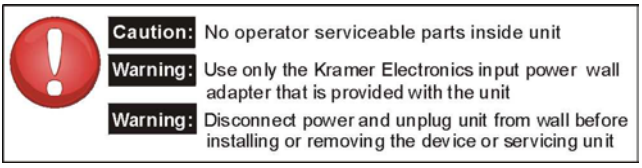
Each package includes the following items:

- The **SL-1** *Master Room Controller*
- Kramer **K-Config** Configuration software
- Power supply and this user manual[2]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high-performance high-resolution cables


Caution: No operator serviceable parts inside unit
Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit
Warning: Disconnect power and unplug unit from wall before installing or removing the device or servicing unit

1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from our Web site at http://www.kramerelectronics.com

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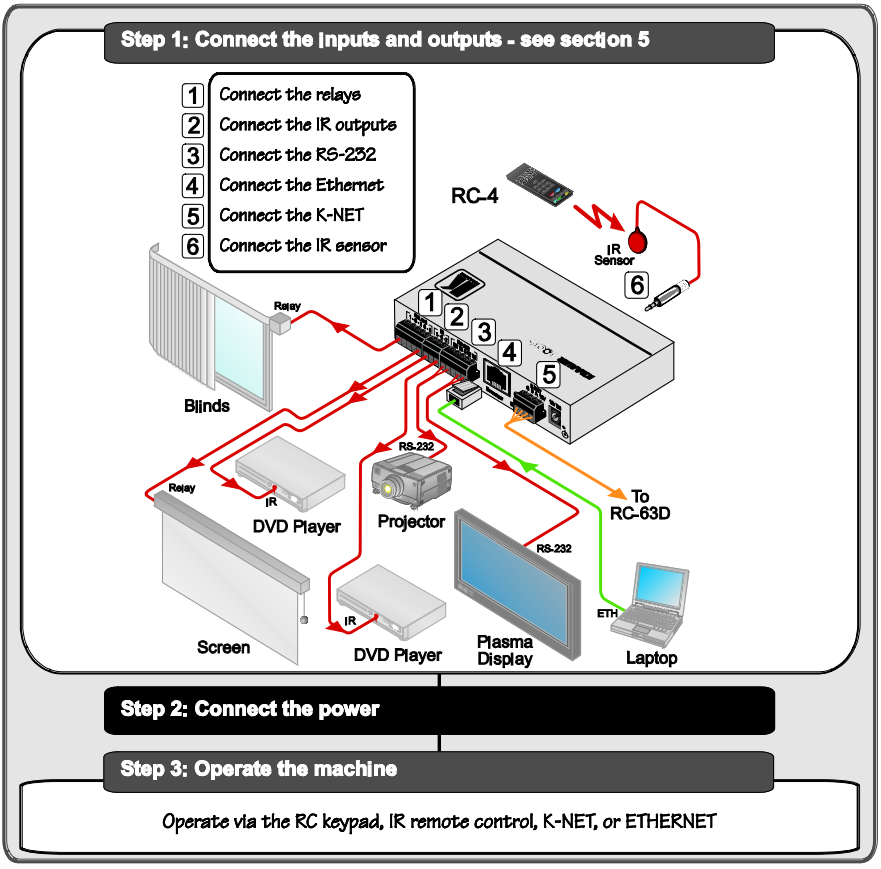
2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.



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3 Overview

The **SL-1** is a highly versatile controller that acts as an all-in-one extended remote control panel for control of A/V equipment—especially projectors and associated equipment—in any room (such as classrooms, boardrooms, or auditoriums). It streamlines operations and simplifies control by integrating audio, video, and computer-video sources into a centralized system.

The **SL-1** *Master Room Controller* features:

- 2 bidirectional RS-232 ports to control AV equipment such as projectors, LCD and PDP displays, power amplifiers, switchers and scalers
- 3 relay contact closure ports to control other room items related to the AV system such as raising and lowering drapes, the screen or the projector
- IR control - 1 input (3.5mm) and 2 outputs (terminals blocks)
- IR Learning that learns commands from any IR remote
- Compatibility with Kramer **Site-CTRL**™ software for network remote control and management over the Ethernet port
- A K-NET™ control channel for connecting compatible user interfaces and supplying power and control data over a single cable
- A USB port for loading device firmware
- Flexible control using Ethernet, K-NET™, IR sensors and external IR commands

To achieve the best performance:

- Use only good quality connection cables[1]
- Position your Kramer **SL-1** away from moisture, excessive sunlight and dust

1 Available from Kramer Electronics on our Web site at http://www.kramerelectronics.com

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4 Your SL-1 Master Room Controller

Figure 1 and Table 1 define the unit.

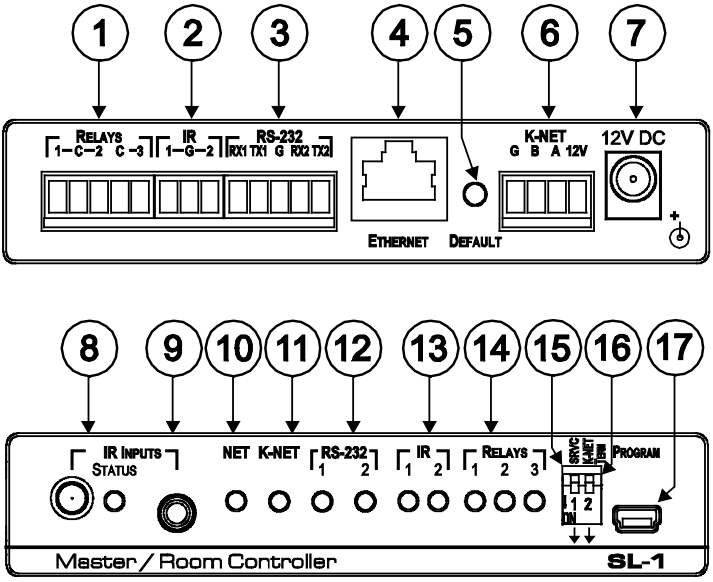

Figure 1: SL-1 Master Room Controller

Table 1: SL-1 Master Room Controller Functions

#	Feature	Function
1	*RELAYS* Terminal Blocks	Connect to low-voltage relay-driven devices (from 1 to 3)
2	*IR* Output Terminal Blocks	Connect to IR emitter cables (from 1 to 2)
3	*RS-232* Terminal Blocks	Connect to the RS-232 devices (from 1 to 2)
4	*ETHERNET* RJ-45 Connector	Connects to the PC or other serial controller through computer networking LAN
5	*DEFAULT* Pushbutton	Press to reset to factory default definitions[1]: IP number – 192.168.1.39, mask – 255.255.0.0, gateway – 0.0.0.0
6	*K-NET*[2] Terminal Block	PIN GND is for the ground connection[3]; PIN B (-) and PIN A (+) are for RS-485, and PIN +12V is for powering the unit
7	*12V DC* Connector	For supplying power to the unit
8	*IR IN* Sensor and LED	Accepts IR remote commands
9	*IR INPUT* 3.5mm Mini Jack	Connects to a remote infrared sensor
10	*NET LED*	Illuminates when the Ethernet link is active

1 First disconnect the power cord and then connect it again while pressing the ETH Factory Reset button. The unit powers up and loads its memory with the factory default definitions and erases all stored presets

2 K-Net is a proprietary Kramer protocol for interconnecting Kramer units

3 The ground connection is sometimes connected to the shield of the RS-485 cable (in most applications, it is not connected)

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#	Feature	Function
11	*K-NET* LED	Illuminates when the K-NET is active
12	*RS-232 Tx/Rx* LEDs	Illuminates while transmitting/receiving on an RS-232 port (1 to 2)
13	*IR* LEDs	Illuminates when an IR port is active
14	*RELAYS* LEDs	Illuminates when an relay is active (1 to 3)
15	*SRVC* DIP-Switch	Slides down for service use only, slides up for normal operation
16	*K-NET TERM* DIP-Switch	Slides down for K-NET termination, slides up for not terminated
17	*PROGRAM* USB Connector	Connect to a computer for unit configuration and firmware upgrading

4.1 Using the RC-4 IR transmitter

You can use the optional **RC-4** IR transmitter to control the machine via the built-in IR receiver on the front panel or, instead, via an optional external IR receiver[1]. The external IR receiver can be located 15 meters away from the machine. This distance can be extended to up to 60 meters when used with three extension cables[2].

5 Connecting the SL-1 Master Room Controller

To connect the **SL-1**, as the example in Figure 2 illustrates, do the following[3]:

1. Connect the RELAY terminal block connectors as follows:
   - Connect RELAY 1 and 2 to the blinds
   - Connect RELAY 3 to the screen
2. Connect the IR outputs as follows:
   - Connect IR OUTPUT 1 to the DVD player 1
   - Connect IR OUTPUT 2 to the DVD player 2
3. Connect the RS-232 ports as follows:
   - Connect RS-232 port 1 to the projector
   - Connect RS-232 port 2 to the plasma display
4. Connect the IR sensor as follows:
   - Connect IR INPUT to an IR sensor
5. Connect the Ethernet port to a network.
6. Connect the K-NET port to any **RC** device with K-NET.

1 Model: C-A35M/IRR-50

2 Model: C-A35M/A35F-50

3 Switch OFF the power on each device before connecting it to your SL-1. After connecting your SL-1, switch on its power and then switch on the power on each device

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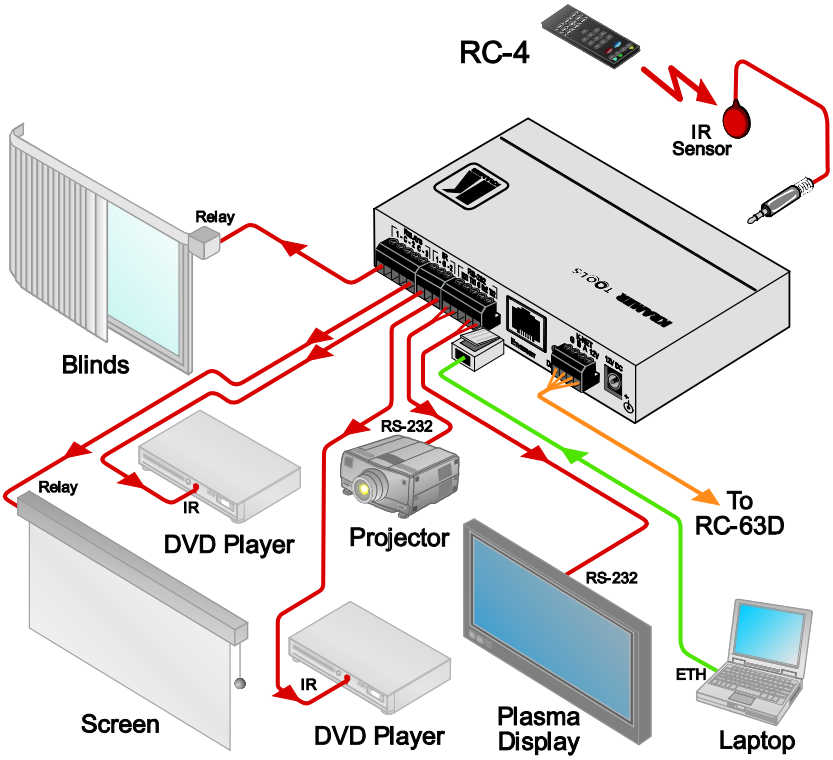

Figure 2: Connecting the SL-1 Master Room Controller

5.1 Connecting the RS-232 Interface

To connect an AV device to the **SL-1**, connect the RS-232 9-pin D-sub port on your device to the RS-232 terminal block on the rear panel of the **SL-1** controller as shown in Figure 3:

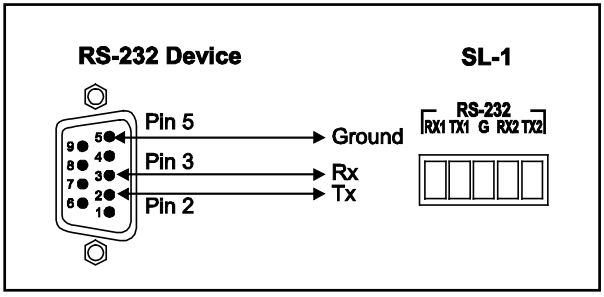

Figure 3: RS-232 Connection

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5.2 Connecting the Ethernet Port

The Ethernet connection of the **SL-1** allows you to perform all control functions of the **SL-1** over the Internet using a PC running the Kramer **Site-CTRL** control program.

To connect the **SL-1** to a network:

1. Connect the Ethernet port of the **SL-1** to the Ethernet port on a network hub or network router, via a straight cable with RJ-45 connectors.
2. At the other end, connect the Internet to a PC running **Site-CTRL**.

After connecting the Ethernet port, you have to install and configure it. For detailed instructions on how to install and configure your Ethernet port, see the **K-Config** Configuration Guide[1].

5.3 Connecting the K-NET Port

The K-NET port is wired as shown in Figure 4.

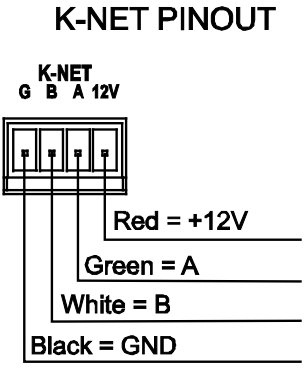

Figure 4: K-NET Pinout Connection

1 Available for download at the Kramer Web site: www.kramerelectronics.com

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6 Operating the SL-1 Master Room Controller

You can operate your **SL-1** using:

- A K-Net compatible remote controller or auxiliary control panel:
  To operate your device using an external K-Net device, see the **K-Config** Configuration Guide[1]
- The optional **RC-4** Infrared remote control transmitter:
  To operate your device using the infrared remote controller, see the User Manual packed with the remote controller
- A PC running **Site-CTRL** control software:
  To operate your device using **Site-CTRL**, see the **Site-CTRL and Web Access** Online User Guide [1]

7 Technical Specifications

The **SL-1** technical specifications are shown in Table 2:

Table 2: SL-1 Master Room Controller Technical Specifications[2]

INPUTS:	2 RS-232 and K-NET on terminal block connectors; Ethernet on an RJ-45 connector; 1 infrared sensor, 1 infrared on a 3.5mm mini jack connector; 1 USB for programming
OUTPUTS:	2 infrared and 3 relays (36V AC or DC, 2A, 60VAC maximum on non-inductive load) on terminal block connectors
DEFAULT IP SETTINGS:	IP number: 192.168.1.39; Mask: 255.255.0.0; Gateway: 0.0.0.0
INDICATORS:	LED indicator for each function
POWER SOURCE:	12V DC, 2A (from power supply) or 12V DC over K-NET connection
DIMENSIONS	12cm x 7.2cm x 2.4cm (4.7" x 2.8" x 1.0") W, D, H
WEIGHT:	0.3kg (0.7lbs)
ACCESSORIES:	Power supply
OPTIONS:	RK-3T 19" rack mount, RC-4 remote controller, external IR receiver[3] and IR receiver extension cables[4]

1 Available for download at the Kramer Web site: www.kramerelectronics.com

2 Specifications are subject to change without notice

3 Model: C-A35M/IRR-50

4 Model: C-A35M/A35F-50

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LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC* Rules and Regulations: Part 15: “Radio frequency devices Subpart B Unintentional radiators”

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

* FCC and CE approved using STP cable (for twisted pair products)

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For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Caution

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

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